DEVELOPMENT OF SOLAR-POWERED AEROPONICS SYSTEM FOR BOK CHOY (*Brassica rapa*) PRODUCTION

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDIX TABLES

LIST OF APPENDIX FIGURES

LIST OF EQUATIONS

ABSTRACT

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The study was conducted to develop a Solar-Powered Aeroponics System for Bok choy production, determine the effect of different irrigation frequencies (T1=45 minutes off, T2=30 minutes off, T3=15 minutes off and 5 minutes spraying time) on bok choy production in terms of growth, yield, and final weight, and perform simple cost analysis. The study was laid out using LSD at a 5% level of significance in CRD (Completely Randomized Design) to compare the means of treatments. The data gathered were analyzed using ANOVA. Bok choy in the Solar-Powered Aeroponics System under T3(15 minutes off, 5 minutes spraying time) gave the effective time interval frequency among the treatments in terms of growth and yield parameter. The total weight produced was 14.2 kg and the total water consumed for the whole system, including all the treatments, was 130 liters. The water productivity for the whole bok choy production obtained a value of 0.11 kg/L. Cost and return analysis using a solar-powered aeroponics system projected a break-even yield of 106.90 kg/yr. with a return of investment of 220.13%.

Keywords: misting frequency; renewable energy; soilless farming; cost analysis

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